

# ICE

*Breaker*  
MAGAZINE

September - November 2012 Edition 60

RRP \$8.50

TASMANIA'S ANTARCTIC NEWS AND VIEWS

Final Edition







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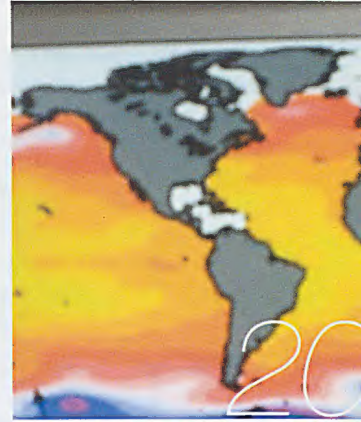
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Cover picture

Courtesy Klaus Arne Pedersen





## Editorial

Since I announced that this edition of Ice Breaker will be the last, I have been heartened by the number of readers who have contacted me and thanked me for producing the magazine over the last 15 years. As I've said before, it has been all those Antarcticans who contributed to Ice Breaker that made it special.

However, with the TPN's new website, increased membership and five-year strategic plans in place, the magazine has fulfilled its initial role in promoting the goods and services of its business members, and I look forward to a break from quarterly gathering of articles. As well, the next twelve months will be very busy with sales of my Igloo Satellite Cabins.

With Ice Breaker being distributed to all high schools and colleges in Tasmania, I was disappointed that so few businesses did not see the magazine as a means of alerting students to future careers in their companies, and hope Antarctic and Southern Ocean education continues to be promoted.

I enjoyed my time with other TPN members at Portland and met many delegates who took time to view the TPN banners, read our brochures and talk about the range of goods and services we could provide.

Articles about the trade show are included in this edition, along with information about some of the ways students learn about Antarctica in USA. I think Australia could do better in this field.

I have really appreciated the support given to all the Ice Breakers since 1997, particularly by the regular, long-term contributors and advertisers.

See you all at Antarctic events in Hobart.

### Anthea Wallhead

Editor, Ice Breaker

## ICE Breaker MAGAZINE

Ice Breaker magazine is published independently by Icewall One as a quarterly magazine covering Tasmanian Polar and Southern Ocean related topics.

**Editor and Production Coordinator**  
Anthea Wallhead

**Design and layout**  
Robert Wallhead  
David Hopkins

**Research**  
Peter Wallhead

**Printer**  
Newprint Pty Ltd

Comments and contributions for future editions are most welcome.

**Address Editorial Correspondence to:**  
Editor, Ice Breaker  
240 Watsons Road,  
Kettering,  
Tasmania,  
Australia 7155

Phone: 03 6267 4774  
Fax: 03 6267 4335  
Email: [anthea@icewall.com.au](mailto:anthea@icewall.com.au)  
Internet: [icebreakermagazine.com](http://icebreakermagazine.com)

**Advertising Rates:**  
Available online at [icebreakermagazine.com](http://icebreakermagazine.com)

**Subscription Rates:**  
Australia wide: \$38.00  
International: \$48.00

(All prices AUD and inclusive of GST where applicable)

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Courtesy Klaus Arne Pedersen





**David O'Byrne**

Minister for Economic  
Development

## Priceless promotion of our sector

It is with an element of sadness that I write the last of my contributions to Ice Breaker, but that sadness is tempered by the positive future I see ahead for the Antarctic industry.

Like all Tasmanians, I've had many conversations over the years about the Tassie winter – long nights, the Southern Ocean wind and bright blue skies. While it's a pleasure to see spring come round again, something about winter puts our incredible warmth and hospitality into sharp focus.

The Antarctic community in particular, over the last few months, has triumphed with its involvement in the 35th Antarctic Treaty Consultative Meeting in June, and the other concluding events of Tasmania's Antarctic Centennial Year. I was able to personally thank many people for the success of the Treaty Meeting, but to those I haven't managed to reach, and the Antarctic community as a whole, a sincere thank you.

The pride we all felt to be part of the Antarctic Community, particularly the Tasmanian Polar Network's new Business Directory launch, and the sumptuous MONA reception, fills me with great confidence for the future.

The Tasmanian elements of the Treaty Meeting were received exceptionally well. 'The best ATCM reception ever' was a common refrain following our MONA event. We were able to showcase and cement our position as cold-climate experts to several hundred high-profile international guests, as well as promote our exquisite food, wine and tourism experiences.

This was done with our usual warmth, good humour and professionalism.

The level of cooperation and expertise displayed was evident throughout the Antarctic Centennial Year which led directly to some promising negotiations with international players, solid business opportunities and priceless promotion of our sector and importantly our state.

The Tasmanian Polar Network continues to go from strength to strength, with a well-represented visit to Portland, Oregon for the recent Committee of Managers of National Antarctic Programs (COMNAP) symposium and Scientific Committee of Antarctic Research (SCAR) open science forum, where Tasmanian businesses and research institutions were able to continue discussions with international delegates they'd hosted a month earlier, and consolidate business opportunities. Again, great work.

September sees the Premier visiting China to promote investment, trade and education in Tasmania and part of her itinerary will include continuing to promote the Tasmanian Antarctic industry and our competitive advantages.

This last issue of Ice Breaker represents the end of an era, but I'm sure you will all join me in thanking Anthea for her tireless efforts, and looking forward to building our current momentum for even bigger and better things to come for the Antarctic industry in Tasmania.

*Sign greeting delegates at Hobart International Airport in June.*

*Courtesy Antarctic Tasmania.*







**Will Hodgman**

Leader of the  
Opposition

## Continue to innovate

In what will sadly be the last edition of Ice Breaker, it seems a good time to reflect on some of the core issues relating to Antarctica the placement of Tasmania as the gateway for the continent.

The Antarctic sector is estimated to contribute some \$182 million to Tasmania's economy, and employs around 830 Tasmanians in research and business. Tasmania has become intrinsically linked to Antarctica and over the years, developments such as the ground-breaking Airlink project, an initiative of the former Howard Liberal Government, has only served to strengthen this connection. It's important that we maintain and continue to innovate to ensure the link between Tasmania and Antarctica remains strong.

The suitability of port facilities in Hobart has once again been raised as an issue with the impending redevelopment of the Macquarie Point rail yards. With millions of dollars in federal funds on the table, it's critically important that the redevelopment makes allowances for the requirements for Hobart as an Antarctic gateway.

While the redevelopment process will likely be a long-running one, the early stages of redevelopment are extremely important and it's vital that our Antarctic sector are engaged in the process and their needs are thoroughly considered and incorporated in at those early stages.

The Liberals have identified education and technology as being a key pillar of Tasmania's future economy and the University of Tasmania is central to our vision of improving the standard of education in Tasmania. We are also committed to working with UTAS to help it achieve its goal of becoming one of Australia's top 10 research universities in Australia.

The new facility for IMAS will add another string to the University's bow as well as boosting our Antarctic and southern oceans' research capacity.

Tourism is increasingly important in the context of Antarctica, not only because of the potential benefits in terms of economic activity for local operators, but also because of the possible risks it can pose to the largely undisturbed continent.

Tasmania offers many unique and attractive tourism opportunities and Antarctica is arguably one of the most exciting. The Liberals have a vision to grow our tourism visitation to 1.5 million visitors by 2020 and our access to Antarctica sets us apart from the rest of the world - while it requires careful consideration and much work, there may well be a much greater scope for Tasmania to maximise our positioning with respect to tourism in Antarctica and how we can also entice visitors to stay in Tasmania on either side of their Antarctic visit.

Antarctica is incredibly important to Tasmania. We are a critical link to the continent and it is our responsibility to not only make the most of this opportunity, but to do so in a manner that reflects the significance of the continent.

At this point I'd like to thank Ice Breaker magazine for its ongoing commitment to keeping the broader community informed about the special continent that is Antarctica, as well as Tasmania's role in shaping our understanding and appreciation of it.

### Student awards

During centenary events this year, students from Grade 5 to 9 were invited to enter a competition to describe their vision for Antarctica 100 years from now. To view the range of ideas expressed by the winning entries, see [centenary.antarctica.gov.au/students-winning-entries](http://centenary.antarctica.gov.au/students-winning-entries).





**Cassy o'Connor**  
Greens Minister for  
Climate Change

## A hotbed of climate science endeavour

One of many great things about living and working in Tasmania is our close connection to Antarctica and the global network of scientists that live and research here. It is Tasmania's intimate links to the Southern Ocean and Antarctica that draws brilliant scientific minds from all over the world.

More than a "Gateway" to Antarctica and the Southern Ocean, Hobart has established a reputation as a global scientific hub, a hotbed of climate science endeavour. Our far-south city is home to the highest per capita concentration of scientists in the southern hemisphere, brought together through the successful collaboration between the Antarctic Climate and Ecosystems CRC (ACE CRC), and its core partners the Australian Antarctic Division, CSIRO, and UTAS.

It is in fitting recognition then, that from 13-19 January 2013, Tasmania will host more than 200 leading climate scientists from around the world, as they gather for the Fourth Lead Authors Meeting of the UN Intergovernmental Panel on Climate Change (IPCC) at Wrest Point in Hobart.

However, funding for the ACE CRC runs out in July 2014. It was always going to be time-limited, but surely the work of the ACE CRC is so important that the Commonwealth should reconsider? This wealth of knowledge within our population is priceless and yet without a reassurance about continued funding this concentrated endeavour is at risk.

If the Australian Government pursues this course and no other funding source can be found, Tasmania will lose some of its top scientists, along with their local and global networks, their astounding knowledge and participation in our local communities.

Following meetings in Marrakech, Brest, and Kunming, it is a great privilege and honour for Hobart to be selected to host the IPCC Working Group 1 meeting and a credit to the quality and integrity of Tasmania's internationally recognised scientific community.

The IPCC's assessment reports guide governments and policy makers around the world and are the scientific foundation for Tasmania's Wedges Report as well as our world-leading Climate Futures project undertaken by the ACE CRC work.

Representatives from each of these organisations are key people in the work of international climate change science. For instance, three out of 14 chapters in Working Group 1 are led by Tasmanian Co-ordinating Lead Authors, John Church CSIRO - Sea Level Change, Steven Rintoul CSIRO - Observations, Oceans, and Nathan Bindoff ACE CRC - Detection and Attribution of Climate Change: from Global to Regional.

Tasmanian scientists Ian Allison and Andrew Constable, from ACE CRC, are also lead authors working on Chapters. And many others such as Susan Wijffels CSIRO, Tas Van Ommen AAD and James Risby CSIRO are contributors.

In May this year, I travelled to Canberra as the Minister for Climate Change to attend a national policy discussion at the COAG Select Council for Climate Change and Energy Efficiency. While there, I ran into a group of young Tasmanian ACE CRC scientists attending their own meeting, preparing the evidence base behind the policy decision making.

Without continuous and rigorous research, without the possibility of funding for deep investigation of our climate, oceans and ecosystems impacts, effects of sea level rise, carbon and the cryosphere that can be so expertly undertaken in the Antarctic and Southern Ocean environment, we will not have the evidence base we need to truly understand and respond to global warming.

It's been a great privilege having a regular spot in Ice Breaker and in this final issue, I would call on the whole community to watch closely, and be ready to stand to secure ongoing funding so that climate science and Antarctic and Southern Ocean research continues to grow in Tasmania into the future.





**John Brennan**  
Chairman, TPN

## Tasmania can provide the goods

The end of the Antarctic Centennial Year approached rapidly in June and I report that the TPN were extremely happy with the cocktail function we hosted for the invited Operational Group, Antarctic Treaty Nation delegates, at the CCMLR premises (Thanks to Drew and his staff for donating the venue).

The launch of the TPN Business Directory, by Minister David O'Byrne, was indeed very timely and we received positive feedback from delegates about the quality and content of the production. For those of you who have not scanned the directory I encourage you to download a pdf version from [www.tasmanianpolarnetwork.com/uploads/7/6/6/9/7669909/tasmanianpolarnetwork\\_2012.pdf](http://www.tasmanianpolarnetwork.com/uploads/7/6/6/9/7669909/tasmanianpolarnetwork_2012.pdf)

A number of business leads developed out of the cocktail function as well as reinforcement to some familiar international faces that Tasmania can provide the goods required to support international cold climate science and logistics.

In August the TPN attended the COMNAP/SCAR Conference in Portland, Oregon, USA. The trade mission, represented by TPN executive and members (Tasports, Tasmanian World Wide Shipping, Icewall One, William Adams, IMAS, Tasmanian Shipping Supplies and new member, Ocean Frontiers), could not have come at a better time, as it reinforced our message to some target nations we hosted two months previously at our cocktail function.

There were a number of commercial enquiries as well as interest in IMAS. Direct tangible results are sometimes difficult to immediately pin-point from a conference but I am confident that the profile and contacts we are building will lead to involvement from other nations at various levels.

While Ice Breaker ends, a new beginning is happening for the sector, where if we all continue to cooperate, be open and courteous, Tasmania will benefit in so many ways.

I recall the first Ice Breaker magazine I received years ago. Although the content may have been just as interesting then, there is no doubt that the quality and layout has evolved into a production to be proud of. Anthea has dedicated an enormous amount of time, and no doubt sum of money, to keep the dream of Ice Breaker alive. I know that I am only but one person who takes my hat off to Anthea for the time and effort she has given to Ice Breaker and its cause to spread the word about the logistics and science performed in the Southern Ocean, Sub-Antarctic and Antarctic region. There certainly will be a gap left to fill after the last edition rolls off the press. Maybe there will be some other keen, dedicated, passionate person(s) out there who would like to take up the challenge?

In closing, well done Anthea, good luck for the future and on behalf of the TPN thank you for your long term contribution to the sector.

## EU offers Antarctic research funds

The objective of the Scientific Scholarship Scheme of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is to assist early career scientists to participate in the work of the CCAMLR Scientific Committee and its working groups.

Scholarships of up to A\$30,000 (around 20,000 Euro) are available to facilitate participation in CCAMLR Scientific Committee workshops or working group meetings over a period of two years. Scholarships are open to scientists from all European Union countries. Preference will be given to early career scientists who have not previously, or routinely, participated in CCAMLR working groups and are actively seeking to participate in CCAMLR science. The deadline for applications is 1 October 2012.



# Gateways and Education

## Historical Views on Gateways to Antarctica

While in Portland, the first series of talks I attended included the topics '1938 The influence of the third German Antarctic Expedition', 'The Classroom as a gateway to Antarctica', and 'From Greenaway to Moore: using Antarctic theatre in the Classroom'.

I was particularly interested in the one entitled 'Punta Arenas and Ushuaia: two gateways to Antarctica viewed through the eyes of early explorers', presented by Aant Elzinga from the University of Gothenburg, Sweden.

His abstract considered a hundred years of factors that contributed to the establishment of these two cities as gateways to Antarctica. References were made to many travel reports of early explorers, showing what provisions were obtained before departure to Antarctica, as well as supplies for their voyages back home.

It also described the development of each city, from colonisation, use of steamships, commercial enterprises and tourist accommodation. Included in the paper were Amundsen, Scott and Shackleton and mentions of ships from France, UK, Sweden and Uruguay.

Since Hobart has recently held Mawson and Amundsen Centenary events, and Professor Pat Quilty's Phillip Law Lecture concerned the development of Hobart's Antarctic connections, Punta Arenas' and Ushuaia's gateway histories made an interesting comparison.

*The abstracts of the lectures above and below are available at [scar2012.geol.pdx.edu/doc/abstracts/Session\\_40](http://scar2012.geol.pdx.edu/doc/abstracts/Session_40) and [Session\\_37](http://scar2012.geol.pdx.edu/doc/abstracts/Session_37) respectively.*

## Antarctic Education, Outreach and Training

This series of talks provided examples of how scientists and students connect, using a variety of interlinked organisations to stimulate students' interest participating in scientific activities from a young age.

One of the most stimulating talks was by Stephen Pekar from New York, who described how his Offshore New Harbor Project near McMurdo Station was made available to students. He urged other scientists to contact other groups in order to spread information throughout schools.

He involved eight groups, all of whom were willing to provide goods, services and time to promote his project. This left him with the responsibility of carrying out his activities with his students, instead of overseeing all aspects. As well as his own blogging, Stephen linked his project to Globe, which provided weather information to schools, US Satellite Laboratories who helped with communications, the Global Nomad group, and the Exploratorium.

Another paper was presented by Jean Pennycook, a science educator, who spoke about scientists collaborating with educators to broaden the impact of research. She stated that the students would not understand research papers because according to her research, these papers are written to be understood by people with a reading age of Grade 20, whereas text in the New York Times is suited to those of Grade 7. It is the science educators' role to make the text more accessible, adding pictures and encouraging students to be interactive in case studies.

One of her ways to make research personally meaningful to students was to provide students with postcards to send to scientists in Antarctica, who stamp it and send it back.

Another involved students making small flags, sending them to scientists, who would take photos of the flags in Antarctica, near penguins, for example.

This interactive involvement has a major impact on connecting students with Antarctic science and is an area yet to be developed in Australia.

In comparison to USA examples, Andy McMinn, from UTAS, described the International Antarctic Institute (IAI), which is a consortium developed by leading global Antarctic educational and research-intensive institutes. Its purpose is to facilitate cooperation and collaboration between member universities in undergraduate and postgraduate multi-disciplinary education in Antarctic and Southern Ocean sciences. As has been seen over the past half-century, international cooperation is the key to the success of large-scale research programs in Antarctica and the Southern Ocean. By sharing teaching resources between international partner universities, educational opportunities can be created on a scale unattainable by any one institute or through traditional bilateral alliances.

The IAI facilitates multi-institute degrees whereby students enrol in their home institution (an International Antarctic Institute-affiliated university) and take up to an agreed proportion of their course units at other member institutions. The units taken during this exchange are credited through their home university. Courses and degrees are 'jointly badged' by the participating institutions of the IAI.

Members and associated members presently include institutes from: Australia, Brazil, Canada, Chile, China, France, Germany, Italy, Japan, Malaysia, New Zealand, Norway, Spain, UK and USA. The International Antarctic Institute is open to institutes who presently or potentially have an Antarctic educational mandate.





**Damon Thomas**  
Lord Mayor, Hobart

## Promoting trade with China

I am very disappointed to note that this is the last edition of Ice Breaker Magazine. I would like to personally acknowledge the many years of hard work by Anthea in producing this really important communications link on all things Antarctic. I know that the former Lord Mayor, Alderman Rob Valentine, Aldermen and staff have gained a great deal of knowledge over the years from this publication.

In my previous column I talked of my hope for convening a meeting of the Southern Rim Gateway Mayors to coincide with the ATCM. Unfortunately this was not able to proceed at that time but I am hopeful that we will again attempt to host such a meeting in the future. As an aside, I was heartened by the enthusiastic response of Christchurch Mayor, Bob Parker, at a time when his own City was going through such a large rebuilding exercise.

I am pleased to note that the Council has resolved that I should accompany the Premier for the Shanghai leg on her upcoming trade mission to China and Vietnam. The Council could clearly see the importance of adding value to the State's efforts in promoting trade with China and in particular to further investigate potential Antarctic links. I am looking forward to making a contribution to this trade mission and to push Hobart's Antarctic credentials.

Finally I am also pleased to advise that the Council will again be hosting the annual Opening of the Antarctic Season function on Friday 19th October in the Town Hall. I firmly believe that this event will continue to grow in importance and help to strengthen Hobart's offer as an Antarctic gateway as well as reinforcing with our scientific community just how valued their work and presence is, in Hobart.

## Successful winter flight

Australia broke new ground in the history of human interaction with Antarctica, after a medical team successfully air lifted a sick American expeditioner from an iceshelf runway at McMurdo Station last month. After the request was made by the National Science Foundation, US personnel prepared the runway, about 80 feet above sea level on a 300-foot thick iceshelf, for the landing of the 62.5 tonne plane.

Although it was minus 35 degrees Celsius, good weather and a two-hour window of twilight allowed the operation to proceed smoothly and after an hour on the iceshelf runway the A319 left for Christchurch, New Zealand.

Pilot of the AAD's A319 passenger plane, Garry Studd, said the rescue involved what is thought to be the earliest winter landing of such a large wheeled jet aircraft in Antarctica.

Aircrew train for this, plan for it and are experienced doing it.

It was unique in the time of year, with a very limited time scale in which to do it. However, if weather conditions deteriorated, the A319 could have returned to Hobart at any time. Summer flights from Hobart require no refuelling in Antarctica.

AAD director Tony Fleming said Australia would bear the cost of the rescue, which he described a great example of the spirit of cooperation between Antarctic nations.

## Ocean Care

The International Fund for Animal Welfare (IFAW) is promoting the protection of 19 critical ocean habitats, starting with the Ross Sea, around Antarctica. IFAW is a member of the Antarctic Ocean Alliance whose partners include UN Biodiversity Ambassador Edward Norton, oceanographer Dr Sylvia Earle and entrepreneur Sir Richard Branson. The first reserve will be put to the vote by 25 countries this year. For public to support this reserve, visit [www.antarcticocean.org](http://www.antarcticocean.org)



# Tributes to Ice Breaker

## From Sir Guy Green

Although Tasmania's engagement with the Antarctic region extends back to the 1830's, over the last 15 years we have witnessed a spectacular increase in the breadth and extent of that engagement. Today hundreds of Tasmanian based organisations and individuals are involved in a large and diverse range of Antarctic related endeavours in business, science, technology, education, tourism, law and policy and the arts.

Along with that increase there has also been a qualitative change in the nature of that engagement, with the emergence of an increasingly coherent Antarctic community which shares a perception of Tasmania's destiny as the most important Antarctic centre in the world. The existence of that community and the culture which sustains it was wonderfully manifested during the Tasmanian Antarctic Centennial Year which has just ended.

Since its inception fifteen years ago, Ice Breaker has provided a forum and an accessible and attractive source of interesting information which have played a most valuable role in fostering that community and that culture. By lifting awareness of developments across the field and facilitating and encouraging communication and interaction between them, Ice Breaker has helped to reinforce a sense of identity and shared purpose amongst the members of Tasmania's Antarctic community and lifted its Antarctic profile with Government, the business sector and the wider community.

We all owe Anthea Wallhead and everyone else involved in the production of Ice Breaker over the years a real debt of gratitude for the significant contribution they have made to promoting Tasmania's Antarctic sector.

## From Denzil Miller Antarctic Tasmania

On one of my earliest visits to Tasmania nearly 30 years ago, I had the rare privilege of visiting the Malcolm Wallhead and Associates facility in Kettering, where I met both Anthea and Malcolm Wallhead. I was deeply impressed by the innovative design approach being pursued by Malcolm. As we well know, times have moved on since then and today the Tasmanian Polar Network vigorously promotes the well-being of many innovative Tasmanian companies that provide cold climate services, as well as the development of polar manufacturing, technology and innovation expertise.

Throughout the years, Malcolm and Anthea's igloos have stood firm against similar challenges to those faced by the Tasmanian Antarctic community as a whole. These challenges have included hard financial times, uncertainty and the vagaries of the Antarctic climate to name a few. Anthea has been both a participator and a commentator of developments in Antarctic business for many of these years. Anthea has come to embody the Antarctic 'spirit' through her loyal support of the sector. She is a committed advocate for Tasmanian Antarctic activity, contributing through her active membership of the TPN; her business, Icewall One which markets her late husband's innovative igloos, and through her thoughtful editorials regarding all things Antarctic in Ice Breaker magazine.

As we farewell Ice Breaker, we thank Anthea for her determination in promoting the Tasmanian Antarctic Sector. Not only has she skilfully networked its community through her publication, it is pleasing to note that her husband's innovative igloo business continues to be relevant.

Not only has the business flourished under Anthea's tenacious promotion, the recent sale of fourteen igloos to the AAD, together with interest from other Antarctic nations and researchers at COMNAP are testimony to the fact that good design and high quality products last the test of time and also a reassurance that Anthea is not slowing down, just redirecting her energies into her business.

Thank you Anthea for all the hard work that you have put into Ice Breaker over the years – we greatly appreciate it and wish you all the best for your future endeavours!

## From Cheryl Walsh, Principal, North West Christian School

I want to say a BIG thank you for your 15 years in presenting the Ice Breaker. My Geography students and myself have thoroughly enjoyed the readings.

## From Drew Wright

All of us here at the CCAMLR Secretariat were sorry to learn that this will be the last edition. On behalf of all of us thank you for your efforts in bringing Ice Breaker to us over the last 15 years. It filled an important Antarctic information dissemination space in Hobart in particular, and for the Antarctic community in general, and will be missed. We wish you well with your future endeavours,

## From Lorne Kriwoken

Thanks so much for all your effort over the years - cant believe it was that many years!!

## From Pam Elliott, MDC

I hope the polar community appreciate all that you have done. I will miss reading the Ice Breaker issues. I think the magazine performed a pivotal role in keeping the community and particularly those of us on the edges informed.





**Drew Wright**

Executive Secretary,  
CCAMLR

## Integrated management and conservation

For the last 31 years some 250 marine experts from around the world have come to Hobart each year to participate in CCAMLR's Scientific Committee. During these annual meetings the best available scientific information about marine ecosystems, harvesting levels and other management issues is presented and discussed, which results in advice being given to the Commission.

In turn, the Commission is mandated under the CAMLR Convention to take the recommendations and advice of the Scientific Committee into consideration when making its decisions. The Commission then implements management strategies and a set of conservation measures that determine the use of marine living resources in Antarctica.

CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources) is an international commission with 25 Members, and a further 10 countries have acceded to the Convention. It regularly cooperates with a large number of scientific and conservation organisations worldwide in joint initiatives including conferences and workshops that support shared efforts relating to marine resource management and conservation.

As an example of this, last month CCAMLR jointly coordinated a four-day workshop in Cape Town, South Africa, for 40 participants from 19 African States with responsibilities relating to Port State controls. The workshop was designed to build capacity among African States in the efforts to combat illegal, unreported and unregulated (IUU) fishing.

CCAMLR and the New Partnership for African Development agency's Partnership for African Fisheries Stop Illegal Fishing working group delivered this workshop, with assistance from the Department of Agriculture, Forestry and Fisheries, South Africa; the Australian Fisheries Management Authority; and the UK Foreign & Commonwealth Office.

The Food and Agriculture Organisation, Stop Illegal Fishing, TRAFFIC, the University of Oslo and the University of Cape Town also contributed. Based in Hobart, the CCAMLR Secretariat also collaborates with other Hobart-based organisations and institutions on Antarctic-related issues of mutual interest.

One such collaboration is the Integrated Management and Conservation of Antarctica course, coordinated by Dr Julia Jabour at the Institute for Marine and Antarctic Studies (IMAS) at the University of Tasmania (UTAS). The course draws on the vast Antarctic expertise in Hobart by involving collaborators from CCAMLR (Dr Keith Reid), the Tasmanian government (Dr Denzil Miller) and UTAS (Dr Marcus Haward and Dr Steve Nicol). With the aim of increasing an understanding of governance arrangements as the basis for future effective cooperation on the conservation and management of the Antarctic for students, the course outlines the Antarctic's international governance mechanisms covering economic expectation, political accommodation, scientific aspiration and policy development.

CCAMLR is now preparing for its 2012 annual international meetings, to be held in Hobart during 8 October - 1 November.

For more information about CCAMLR, visit their new website at [www.ccamlr.org](http://www.ccamlr.org)

CCAMLR internships are now available as part of International Antarctic Institute courses at UTAS.





## Wharf shed progress

Hobart's position to be recognized as Australia's Gateway to Antarctica has been well cemented during recent weeks with the commencement of construction works at Macquarie Wharf Shed No 2.

Tasports' \$7 million project will see the re-development of the shed into a dedicated cruise and Antarctic facility. Fairbrother Construction commenced works in early August and completion of the project is anticipated during the first quarter of 2013, thus ensuring that the facility is fully operational for the 2013-14 Antarctic season.

To market the new facility at Mac 2 and Tasports' commitment to the growth of Antarctic shipping in Tasmania, the organisation recently participated in the combined SCAR and COMNAP conferences in Portland, Oregon, USA, as part of the Tasmanian Polar Network delegation.

Segment Marketing Manager Karen Rees had the opportunity to speak with operational and logistics managers of current and potential future Antarctic programs seeking shipping services in Tasmania.

"Our participation in the trade exhibition sets a strong signal of Tasports' commitment to the sector," Ms Rees stated. "Nothing replaces direct communication with the customer and we have provided information and advice on our new facilities and general services available for Antarctic shipping through the Port of Hobart."

Tasports plays an active role in the sector by engaging with Antarctic businesses and National Antarctic Programs to facilitate shipping and other port and cargo services.





# Portland Trade Show

When SCAR XXXII and COMNAP XXIV meetings were held in Portland, Oregon, USA this year, from 15-25 July, the Tasmanian Polar Network sent a delegation to set up a trade display. Included were Chrissie Trousselot from Antarctic Tasmania; John Brennan, TPN Chairman; Peter Fewkes, from William Adams; Stephen Parodi from Tasmanian Worldwide Shipping; Anthea Wallhead from Icewall One and Karen Rees from Tasports. Richard Fader from Tasmanian Shipping Supplies also attended, as well as staff from IMAS and AAD.

Most TPN members left Hobart on a 6.00am flight on Saturday July 14, and met up at Los Angeles' airport to catch an Alaskan Airlines plane to Portland. They arrived at the Portland Hilton on Saturday afternoon US time after crossing the International Dateline. Midsummer after midwinter!



All SCAR lectures were held at the Hilton and on Sunday we set up our banners downstairs, outside the ballroom. This was used for lectures and social events, like the Icebreaker reception for all delegates, to be held that night. Other companies with banners were PistenBully from Germany (tracked vehicles for polar areas); Hanmar from Sweden, (container sideloaders) and icebreaker New Zealand Merino (clothing).

Our TPN banner was the largest there, and we also had our own banners, as well as one for Ocean Expeditions, our newest TPN member.

The number of people attending the reception was huge, but most guests were more interested in talking, eating and drinking than viewing banners.



Banners remained in place until the next morning, after groups arrived to attend concurrent lectures on a wide range of Antarctic topics. The hotel supplied generous loads of snacks and drinks for the delegates, with pastries, muffins, éclairs and doughnuts available every day.

Once the doors closed on the lecture rooms, we moved the display items up to the Plaza level, next up from the ground floor, and set up the banners along a wall, with tables for brochures and Igloo models in front.

The TPN occupied the largest area and attracted the attention of numerous attendees to the lectures, every coffee break and lunchtime.

TPN's large banner, showing the Hobart port area, was invaluable for pointing out where Tasports' new facilities were to be built, the old railyards' potential development and the proximity of other Antarctic-related businesses.

Amongst other companies with banners and tables around the walls on the same level was Google, which was showing streetviews of several American Antarctic bases; Canada Goose clothing; Vernier Software and Technology and Ken Borek Air.







*L-R: Richard Fader, Peter Fewkes, Chrissie Trousselot, Stephen Parodi, Karen Rees, Anthea Wallhead and John Brennan. Photo courtesy Chrissie Trousselot.*

Also on the Plaza level was a room called the Pavilion, where for three days, different Antarctic-related posters were put on display and awarded prizes. Another area on the same level was an interesting exhibition of Antarctic photos, some of which received awards, too. All delegates and sponsors were given a satchel made from recycled bicycle tyres, a ceramic mug, a timetable of SCAR lectures and information about Portland shops, restaurants and other tourist facilities.

One or more TPN members were available at the display over the next three days, but most interest came from SCAR delegates, rather than COMNAP members, whose meetings were all at the Portland University, a 13-block distance away.

Some TPN members attended a few of the meetings there, while others went to SCAR lectures in the Hilton, or just over the road in their Executive Tower.

In the evenings, most members went out to restaurants to sample local food, wines and beers, as Portland has a large number of micro-breweries. Three members attended the SCAR/COMNAP Banquet on Wednesday night.

After packing away the display on Thursday afternoon, TPN members, 3 AAD staff and 3 from the French delegation, dined at a popular Italian restaurant. Most TPN members left Portland on Friday, which meant that those returning to Hobart arrived on Sunday July 22.



*Event sponsors, from the slide show.*



*Street sculptures in Portland.*



## Antarctic Division tour

Although the Tasmanian Antarctic community did not hold a midwinter festival this year, several events were arranged in mid-June.

As well as the Longest Night Film Festival at the State Cinema, several musical events and the ANARE Club's dinner, a visit to the Australian Antarctic Division was arranged by ANARE Club members.

I joined a group of over 30 people toured some of the laboratories, the clothing store and storeroom. Amongst the group were those celebrating the 50th anniversary of the Vostok traverse, a 3000 km trek with 4 Weasels and two D4 Caterpillars, from Wilkes Station to Vostok, the Russian base in Antarctica. At the end of the tour, we were able to talk directly via videolink to station leaders and some of the expeditioners at Casey and Mawson.

The group first gathered in a meeting room, where we were given an outline of the AAD's role and staff - 350 staff and up to 500 expeditioners during the summer seasons.

Currently there were 20 wintering over at Mawson Station, and Davis and Casey catered for about 100 during the summer. We then saw a DVD about activities at Mawson and Macquarie Island, including ship and station life, as well as some of the research involving penguins, krill, whales, albatross, ice and the oktocopter which provides aerial views of plant and animal life.

The large group was then divided into smaller ones to tour some of the AAD. My group first visited the clothing store where expeditioners were fitted out with five layers of clothing to ensure they were kept warm in below zero temperatures. After viewing all sorts of jackets, pants, gloves, boots, headwear and underclothing, it was interesting to note that a Victorian company (not Tasmanian) was manufacturing customised clothing to suit all sizes.

Apparently a Canadian company was providing boots until it was discovered that the boots were made in China, and now an Australian company was being sought

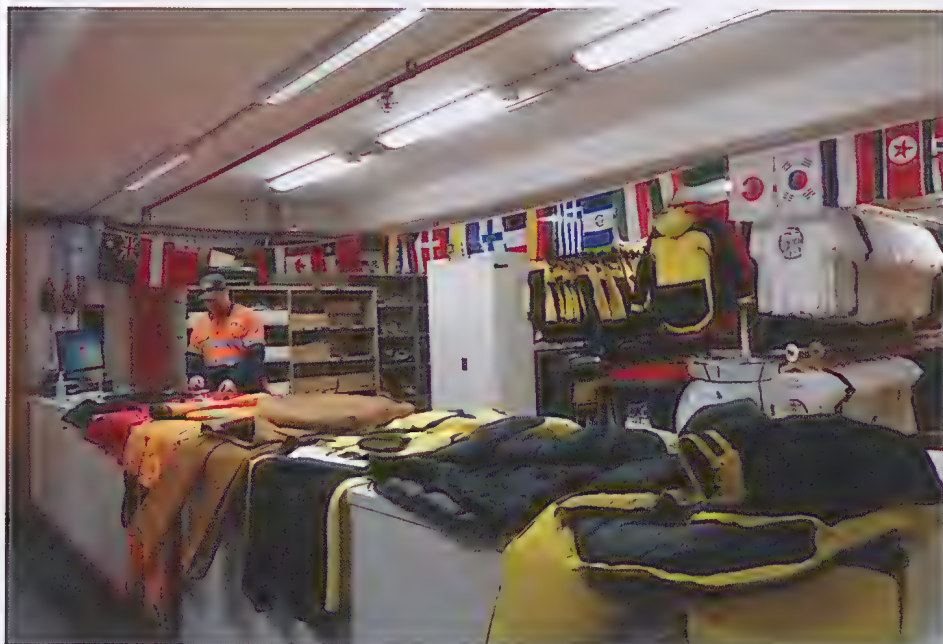


As some of the group were interested to see an old Weasel, a tracked vehicle used in early exploration, we were taken to the stores area, where one section held equipment used in the 1950s and 1960s. Among them were old skidoos, an old plywood, caravan-shaped cabin and other machinery parts.

Our next stop was the electro-microscopy laboratories, where we were shown both the fixed monitor, which enabled study of a single area of a cell, and scanning monitor, which enabled study of several areas.

We then visited the chilly krill laboratories where the seawater in the krill tanks was kept at Antarctic temperatures. AAD grows its own krill food from phytoplankton sent from USA.

At the instrument workshop, we were shown one of the new whale tags being manufactured and a type of 'craypot' used to catch krill.





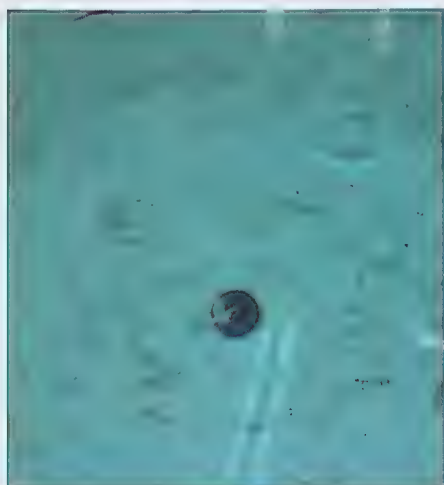
*Over: Two areas of the clothing store.*

*Right: Electron microscope.*

*Below: Krill tank.*

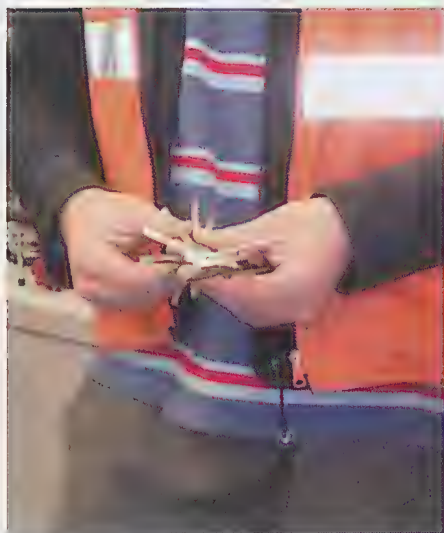
*Bottom-left: Whale tag.*

*Bottom-right: Video-conferencing display showing Casey Station and Hobart.*



On one bench, a section of helicopter was being fitted with additional parts to house a camera for aerial photography.

Once all groups had visited these areas, we all reassembled in the meeting room and watched a screen linking us to Casey Station. Mark Hunt, the station leader, and several other winterers, described some of the midwinter activities carried out. A blizzard prevented the usual swim, but there were sports, a barbecue and a pantomime called 'Snow White and the Seven Tradies'.



Several of the group who spent time at Casey in the 1950s and 60s exchanged information about the earlier Vostok traverse

The videolink was then switched to Mawson Station, where Bob Jones, the station leader, answered questions from the earlier expeditioners about old huts, landing planes at Rumdoodle, cosmic ray research and agronomy. Midwinter this year at Mawson also featured blizzards, but some participated in 'Olympic' sports such as ice hockey, curling and boot throwing. Mawson Station has wind turbines, which provide about 40% of the power, plus diesel turbines.

After farewelling Mawson, we all moved to the café for coffee and food. Brochures and a badge commemorating Mawson's centenary were also given to each person.

Thanks to Ingrid McCaughey and the ANARE Club for arranging this visit.







*Pictures and text courtesy Sarah Seaman, 11/11/10*

## Investigator's 800 tonnes

The construction of Australia's new Marine National Facility research vessel Investigator now has over 800 tonnes of steel in place.

The ship is being erected on a wharf at the Sembawang Shipyard in Singapore, under the management of Teekay Australia, which was awarded the contract for the commissioning and construction of Investigator.

The Executive Director of the Future Research Vessel Project, Toni Moate said the addition of two blocks to the hull of the ship saw Investigator hit the 800 tonne mark.

"The ship is being constructed in blocks with the hull blocks each weighing around 100 tonnes, and to date seven blocks have been welded together," Ms Moate said.

Once each block is assembled in the shed, it's loaded onto a large, slow moving flatbed truck and first taken off for a high pressure wash, then into the paint shed, where it's coated inside and out. Next it's taken to the RV Investigator Erection Area, where cranes lift each section into place and it's welded together.



"We've also just fitted the three main engines into the hull, which now means sections of the superstructure can start to be added, which includes space for laboratories, cabins and the bridge."

Back in Australia the Future Research Vessel Project Team is hard at work finalising the process for the purchase of scientific equipment for Investigator.



*The three main engines were recently lifted into place.*



*Left: The space in the hull for the three main engines.*

*Below: To date seven blocks have been completed and welded together in the Erection Area.*

*Right: Dr Lindsay Pender from the Future Research Vessel Project Team in Norway, inspecting the scientific winches.*

"We expect to be able to go out to market for the purchase of around AUD\$6 million worth of scientific equipment shortly, which will be a good opportunity for local suppliers," Ms Moate said.

The list of equipment is long and includes things like a very large weather radar, instruments for deep sediment coring and a trace metal clean container, to name just a few items.



Details of the full list of scientific equipment for Investigator will be posted on the Future Research Vessel Project blog (<http://csirofrvblog.com/>) in coming weeks.

It was in 2009 the Australian Government committed AU\$120 million to the purchase of a new research vessel for Australia's Marine National Facility. The project is an initiative of the Australian Government, being conducted as part of the Super Science Initiative and financed from the Education Investment Fund.





# Tracing Southern Ocean carbon pathways to the deep

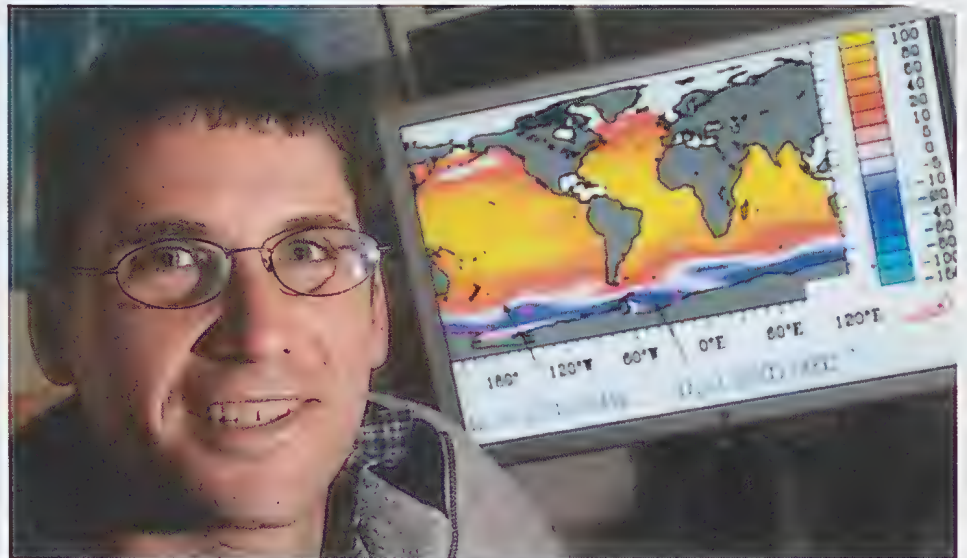
A team of British and Australian scientists has discovered an important method of how carbon is drawn down from the surface of the Southern Ocean to the deep waters beneath. The Southern Ocean is an important carbon sink in the world – around 40% of the annual global CO<sub>2</sub> emissions absorbed by the world's oceans enter through this region.

Reporting this week in the journal *Nature Geoscience*, scientists from British Antarctic Survey (BAS), CSIRO and the Antarctic Climate & Ecosystem CRC, reveal that rather than carbon being absorbed uniformly into the deep ocean in vast areas, it is drawn down and locked away from the atmosphere by plunging currents a thousand kilometres wide.

Winds, currents and massive whirlpools that carry warm and cold water around the ocean – known as eddies – create localised pathways or funnels for carbon to be stored.

Lead author, Dr Jean-Baptiste Sallée (below) from British Antarctic Survey says,

“The Southern Ocean is a large window by which the atmosphere connects to the interior of the ocean below. Until now we didn't know exactly the physical processes of how carbon ends up being stored deep in the ocean.



It's the combination of winds, currents and eddies that create these carbon-capturing pathways drawing waters down into the deep ocean from the ocean surface.

“Now that we have an improved understanding of the mechanisms for carbon draw-down we are better placed to understand the effects of changing climate and future carbon absorption by the ocean.”

CSIRO co-author, Dr Richard Matear (above) says the rate-limiting step in the anthropogenic carbon uptake by the ocean is the physical transport from the surface into the ocean interior.

“Our study identifies these pathways for the first time and this matches well with observationally-derived estimates of carbon storage in the ocean interior,” Dr Matear says.

Due to the size and remote location of the Southern Ocean, scientists have only recently been able to explore the workings of the ocean with the help of small robotic probes – known as Argo floats. In 2002, 80 floats were deployed in the Southern Ocean to collect information on the temperature and salinity.

This unique set of observations spanning 10 years has enabled scientists to investigate this remote region of the world for the first time. The floats are just over a metre in length and dive to depths of 2km. Today, there are over 3,000 floats in the oceans worldwide providing detailed information used in oceanic climate models.

The team also analysed temperature, salinity and pressure data collected from ship-based observations since the 1990s. The instrument used for this is called a CTD profiler which is a cluster of sensors taking measurements as it's lowered deep down into the ocean to depths of more than 7km.

The work was supported through the Wealth from Oceans and Australian Climate Change Science Programs, and the Australian Government's Cooperative Research Centre program.

Richard Matear can be contacted on 03-62325243 or 0428 111 314

**Craig Macaulay, CSIRO**



## Igloo update: Melons on ice

The Australian Antarctic Division has purchased 14 new Igloo Satellite Cabins to replace old units which have been in use for 20-30 years. The new Igloos are all extended units – not ‘Apple huts’ but ‘Melons’ – and will be coloured ‘International orange’ rather than the usual red.

Starting in September this year, three deliveries will be made to AAD’s Macquarie Wharf No. 4, so the Igloos can be shipped to Antarctica. Remote locations such as Bunker Hills, Beaver Lake and Peterson Island will all have new Igloos. AAD plan to fly in a new Igloo and set it up, then disassemble the old one and fly it out.

Polar institutes from 17 countries use these pre-fabricated, fibreglass cabins in Arctic and Antarctic areas. They are made in Tasmania by Penguin Composites, under licence from Icewall One, the original designers.

This is the thirtieth year that Igloos have been purchased for use in Antarctica and other remote areas. Earlier this year, France’s polar institute purchased an Igloo for use on Kergulen Island in the Sub-Antarctic. An Igloo was chosen over a wooden cabin, because it could be cleaned inside and out to remove foreign matter.

Three units were exported to Sweden for use as weather monitoring stations in Sweden’s interior.

At the recent SCAR/COMNAP meetings in Portland, Oregon, delegates from the Czech Republic, Argentina and Brazil expressed interest in Igloos at the trade display.

*Right: The French igloo on display in Brest, France. Photo: Yves Frenot, IPEV.*

*Below-right: AAD will purchase extended Igloos or melons similar to these used by British Antarctic Survey researchers at their Sky Blu station in Antarctica. Photo: Paul Thacker, BAS.*

*Bottom: One of the Swedish Igloos at Abisko, Sweden. Photo: Tyler Logan.*





# Polar Publications

## BOOK

### **Sophie Scott goes South**

Alison Lester  
Penguin  
\$29.95

A children's book about a nine-year-old going to Antarctic on an icebreaker with her father, the ship's captain.

## BOOK

### **Southern light: Images from Antarctica**

David Neilson  
Snowgum Press  
\$98.00

A collection of colour and black & white photographs taken by the author during six voyages to Antarctica.

## BOOK

### **Science in the Snow: Fifty years of international collaboration through the Scientific Committee on Antarctic research**

David Walton and Peter Dickson  
SCAR Publications  
Price \$39.00

## BOOK

### **Roald Amundsen**

Cornelia Lüdecke  
Herder  
12.95 Euro

A new biography of the polar explorer.

Photo: Klaus Arne Pedersen

## BOOK

### **Arctic Voices: Resistance at the Tipping Point**

Subhankar Banerjee  
Random House  
Price: \$22.22

Brings together first-person narratives from more than thirty prominent activists, writers, and researchers who address issues of climate change, resource war, and human rights.

## BOOK

### **Thirst**

L.A. Larkin  
Murdoch Books  
Price: \$9.99

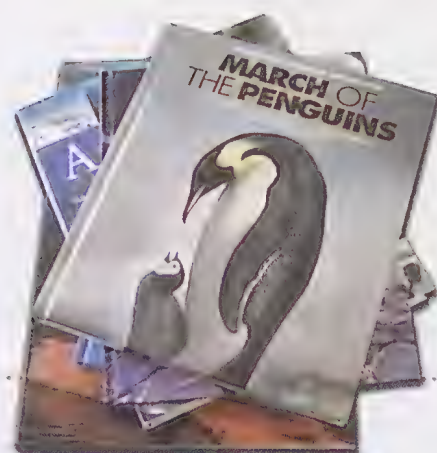
A thriller set in Antarctica, which comes under attack from a ruthless mercenary, testing a glaciologist's survival skills to the limit.

## BOOK

### **The History of the International Polar Years (IPYs)**

Published by Springer-Verlag  
Price \$129

Explains the political, economic, technical and scientific conditions and expectations that laid the basis for each IPY, which expanded both the scope and extent of understanding of the complexities in polar regions.



## BOOK

### **Lost Antarctica**

James McClintock  
Palgrave Macmillan  
Price: \$16.99

An original look at the polar environment under snow and ice, by a marine ecologist.

## JOURNAL

### **[www.polarresearch.net](http://www.polarresearch.net)**

Open access journal of the Norwegian Polar Institute, including Geology, Glaciology, Oceanography, Meteorology, Atmospheric Science, Biology and ecology, Human and social sciences.

## ANTARCTIC MAPS

**<http://www.pgc.umn.edu/maps/antarctic>**





## To all readers

This edition, No. 60 is the last.

Thank you to all who have contributed ideas, articles, photos and advertisements to the magazine over the past 15 years.

A special thanks must go to my older son, Robert, without whose computer programming expertise, this magazine would not exist.

Another special thanks goes to my younger son, Peter, for research, advice re topics to interest younger readers and proofreading.

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9	September 2012	Last day of Traversing Antarctica exhibition in Canberra, ACT.
10-24	September 2012	International Summer School for Students: 'Climate Change in the Marine Realm'. Wadden Sea Station, List, Sylt and the University of Bremen, Germany.
13	September 2012	TPN AGM and General Meeting 3.00pm. CCAMLR headquarters. Hobart, Tasmania.
17-18	September 2012	Mawson the Musical. Hobart, Tasmania.
21	September 2012	25th Anniversary of the Montreal Protocol on substances that deplete the ozone layer. See <a href="http://www.environment.gov.au/atmosphere/ozone">www.environment.gov.au/atmosphere/ozone</a>
19	October 2012	HCC launch of the Antarctic Season, Hobart Tasmania.
23	October 2012-	CCAMLR meetings. Hobart, Tasmania.
1	November 2012	
1	December 2012	Antarctica Day. See <a href="http://www.ourspace.org.uk">www.ourspace.org.uk</a> and <a href="http://www.apecs.is/outreach/antarctica-day">www.apecs.is/outreach/antarctica-day</a>
6	December 2012	TPN meeting Hobart, Tasmania (to be confirmed).
13-19	January 2013	Fourth Lead Authors of the UN Intergovernmental Panel on Climate Change (IPCC). Hobart, Tasmania.
14-20	April 2013	Arctic Science Summit Week. Krakow, Poland.

## Flights

28	October 2012	Airbus A319 FMcm01A/B Hobart to McMurdo and return
29	October 2012	Fixed Wing Aircraft FW1-1 South Pole to Casey via Dome C
29	October 2012	C130 Hercules FHerc1A/B McMurdo to Casey and return
29	October 2012	C130 Hercules FHerc2A/B McMurdo to Casey and return
30	October 2012	Basler Turbine DC3 FBAAP1 South Pole to McMurdo
30-31	October 2012	Airbus A319 FMcm02A/B Hobart to McMurdo and return
23	November 2012	Fixed Wing Aircraft FW1-4/5 Davis to Mawson and return
8	December 2012	Fixed Wing Aircraft FW1-5 Davis to Casey
11	December 2012	Airbus A319 FA01A/B Hobart to Wilkins Aerodrome and return
14	December 2012	Airbus A319 FA02A/B Hobart to Wilkins and return
14-15	December 2012	Basler Turbine DC3 FBAAP2/3 Casey to Davis and return
2/5	January 2013	Basler Turbine DC3 FBAAP4/5 Casey to McMurdo and return
5/6	January 2013	Fixed Wing Aircraft FW1-6a/b Casey to Mawson to Davis
7	January 2013	Basler Turbine DC3 FBAAP6 Casey to McMurdo
22	January 2013	Fixed Wing Aircraft FW-7 Davis to Casey
24	January 2013	Basler Turbine DC3 FBAAP7 McMurdo to Casey
29	January 2013	Airbus A319 FA03A/B Hobart to Wilkins Aerodrome and return
5	February 2013	Airbus A319 FA04A/B Hobart to Wilkins Aerodrome and return
12	February 2013	Airbus A319 FA05A/B Hobart to Wilkins Aerodrome and return
13	February 2013	Basler Turbine DC3 FBAAP8 Casey to South Pole
14	February 2013	Fixed Wing Aircraft FW-8 Casey to South Pole
15	February 2013	Airbus A19 FA06A/B Hobart to Wilkins Aerodrome and return



# Ocean Expeditions

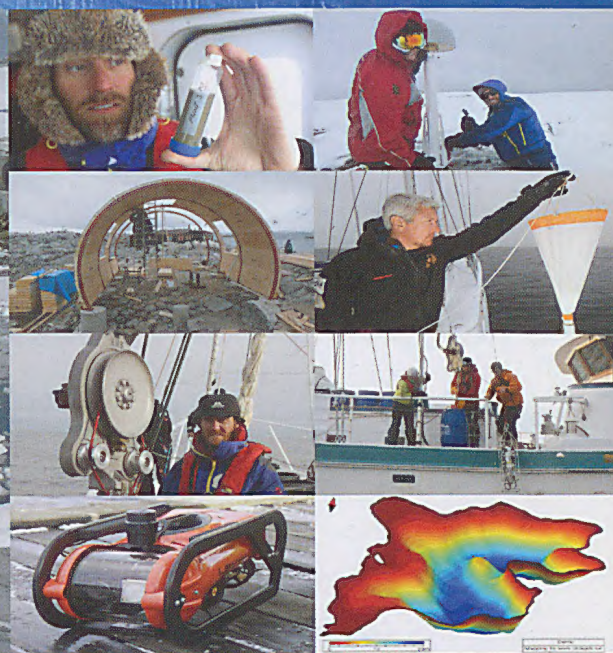
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## Shipping schedule

14	September	2012-	Aurora Australis	VMS	Departs Hobart for Marine Science and SIPEX
26	October	2012			
22	October	2012	L'Astrolabe	VRO	Departs for Macquarie Island
26	October	2012	L'Astrolabe	VRO	Macquarie Island
3	November	2012	L'Astrolabe	VRO	Dumont D'Urville
5-7	November	2012	Aurora Australis	V1	Arrives Hobart, departs for Davis Station
19	November	2012	L'Astrolabe	VRO	Arrives Hobart
21-29	November	2012	Aurora Australis	V1	Davis Station
9	December	2012	Spirit of Enderby	VT1	Departs Hobart for Macquarie Island
10-12	December	2012	Aurora Australis	V1/2	Arrives Hobart, departs for Casey Station
14-15	December	2012	Spirit of Enderby	VT1	Macquarie Island
21	December	2012	Spirit of Enderby	VT1	Arrives Bluff, NZ, departs for Macquarie Island
21-29	December	2012	Aurora Australis	V2	Casey Station
27-28	December	2012	Spirit of Enderby	VT3	Macquarie Island
7-9	January	2013	Aurora Australis	V2/3	Arrives Hobart, departs for Davis Station
7	January	2013	Orion	VT4	Departs Bluff, NZ, for Macquarie Island
8	January	2013	Spirit of Enderby	VT3	Arrives Dunedin, NZ
11-12	January	2013	Orion	VT4	Macquarie Island
21-25	January	2013	Aurora Australis	V3	Davis Station
25	January	2013	Orion	VT4	Arrives Hobart
29	January	2013-	Aurora Australia	V3	Mawson Station
6	February	2013			
29	January	2013	(unnamed)	VWHALE	Departs Nelson, NZ.
5	February	2013-	(unnamed)	VWHALE	Marine science - acoustic and tagging work with whales
10	March	2013			
20-22	February	2013	Aurora Australis	V3/4	Arrives Hobart, departs for Macquarie Island
25	February	2013-	Aurora Australis	V4	Macquarie Island
5	March	2013			
8	March	2013	Aurora Australis	V4	Arrives Hobart. Off-hire.
18	March	2013	(unnamed)	VWHALE	Arrives Nelson, NZ.

See Polar Calendar (Page 24) for Flights



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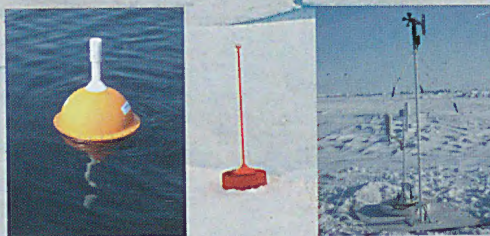


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